

CR 00-029  
PATENT**Remarks**

Entry of the foregoing amendments and reconsideration of this application is requested. By this amendment, claims 1-16 have been amended to more specifically set forth the invention. Claims 17-20 were previously withdrawn. Claims 1-16 remain in the application.

**Claim Rejections - 35 U.S.C. § 112**

The Examiner has rejected claims 1-6 and 8-11 under 35 U.S.C. 112, first paragraph, stating that the specification is enabling for electrophoretic deposition, but does not reasonably provide enablement for the deposition of a binder material and carbon nanotubes by any other deposition.

The applicants in light of this rejection have amended claims 1-16 to claim a method of fabricating a cathode using electrophoretic deposition. It is believed that this amendment to the claims overcomes the rejection in that the claims are now drafted specifically to the fabrication of a cathode using electrophoretic deposition. No new matter has been introduced by the amendments. It is believed that claims 1-6 and 8-11 are now in a condition for allowance over the 35 U.S.C. §112 rejection. Notice to that effect is respectfully requested.

CR 00-029  
PATENT**Claim Rejections - 35 U.S.C. § 102 and §103**

The Examiner has rejected claims 1-4 under 35 U.S.C. §102(e) as being anticipated by Russ, U.S. Patent No. 6,462,467, hereinafter referred to as Russ. The Examiner in making this rejection refers the applicant to claims 11 and 15, lines 29-53 of Russ; column 4, line 54 through column 5 line 25; and column 5, line 66 through column 6, line 26.

Additionally, the Examiner has rejected claims 5-16 under 35 U.S.C. §103(a) as being unpatentable over Russ in view of Choi, et al., U.S. Patent No. 6,616,497, hereinafter referred to as Choi. The Examiner in making this rejection states that Russ further discloses in column 3, lines 60-65 that forms of carbon can be used as the electron emitting materials. The Examiner acknowledges the difference between the disclosure of Russ and the instant claims is the use of specific carbon nanotubes in the colloidal solution. The Examiner asserts that Choi discloses a method of manufacturing a field emitter by electrophoretic deposition, using carbon nanotubes as the emitting structure. The Examiner asserts that the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Russ, with the teachings of Choi, because the selection of any of known equivalent emitting structure would be within the level of ordinary skill in the art.

The applicants respectfully disagree with the 35 U.S.C. §102(e) and 35 U.S.C. §103(a) rejections in light of the amendments to the claims as presented

CR 00-029  
PATENT

herein. With respect to the 35 U.S.C. §102(e) rejection, the applicants assert that Russ fails to disclose the applicants inventive method as now claimed. More particularly, the applicants assert that Russ discloses and claims a resistive layer formed by providing a particle loaded deposition bath comprising a plurality of particles of a resistive material, a hydrophilic alcohol, water, a charging salt, and a dispersant. The method as claims requires electrophoretically depositing these particles onto a conductive material to form a powder coating layer, which serves as the resistive layer. The particles sizes are discloses as having an average particle size in the range of about 0.01 $\mu$ m to about 0.5  $\mu$ m.

In contrast, the applicants have amended the claims to further clarify that the solute that is disposed within the solvent, is comprised of dissolved metal ions. As such, the applicants have limited the size of the solute materials, namely providing for dissolved metal ions, which typically are on the order of one metal of ion, or one nanometer in size. Ultimately, the building blocks for the applicants' binder layer are quite a bit smaller than the particle sizes disclosed by Russ to form his powder coating resistive layer. The applicants building blocks, the metal ions, form a thin layer, so as to enable the layer to not add any resistance to the system, thus not serve as a resistive layer. In the event the layer is formed having greater resistance than needed, it is stated on page 8, lines 20-23 that an additional conductive metal oxide can be added to the binder layer to increase conductivity of the binder layer. The applicants assert that their resultant binder layer has a resistance of less than one megaohm and that the resistance layer of Russ has a resistance of at least one gigaohm. Accordingly, the applicants assert that their inventive method is not

CR 00-029  
PATENT

disclosed by Russ in that Russ fails to disclose or claim a solution in which provided are metal ions for electrophoretically depositing a binder layer on a substrate. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The applicants assert that their binder layer is formed to serve as a means for binding the emitting structures to the substrate, and not a resistive layer, as is the layer of Russ.

Accordingly, applicants do not believe that the claimed invention is anticipated by Russ in light of the amendments to the claims presented herein. To anticipate a claim for a patent, a single prior source must contain all its essential elements. Each limitation of a claim must be found in a single reference, practice, or device. In that the Russ patent fails to claim the inclusion of a binder layer formed by electrophoretic deposition using a solvent, having a solute comprised of dissolved metal ions, there is clearly no anticipation by Russ. This exclusion of a claimed element from a prior art reference is enough to negate anticipation by this reference.

Therefore, in light of these remarks, the applicants assert that the claims presently in the application do not read on the device of Russ. Accordingly, the applicants believe that claim 1 is patentable over Russ. In that the independent claim 1 includes the requirement for the inclusion of solvent, having a solute comprised of dissolved metal ions, dependent claims 2-4, depending therefrom,

CR 00-029  
PATENT

respectively, also include this requirement and are therefore not anticipated by the cited reference Russ. Therefore, applicants believe that claims 1-4 are now in condition for allowance.

In light of the above arguments, the applicants believe the 35 U.S.C. 102(e) rejection has been overcome. Accordingly, applicants believe claims 1-4 are now in a condition for allowance. Notice to that effect is respectfully requested.

With respect to the 35 U.S.C. 103(a) rejection, the applicants assert that claims 5-8 depend from claim 1 which is now believed to be in a condition for allowance. Further modification of the teaching of Russ with the teachings of Choi, also fails to make the applicants device obvious. If the emitting structure of Russ, read in light of Choi, were carbon nanotubes, the method would still fail to provide for the inclusion of dissolved metal ions in the solvent as previously described with regard to the 35 U.S.C. 102 rejection. Further modification by Choi, also fails to teach or make obvious the applicants' inventive method of forming a binder layer for binding of the electron emitting structure.

Claim 9 has been amended herein to state the use of a solvent, including a solute comprised of dissolved metal ions, as previously argued. Accordingly, the applicant believes that claim 9 is now in a condition for allowance over the teaching of Russ, when viewed in light of Choi. The applicants assert that dependent claims 10-17 must each contain this element in that they depend from claim 9, and are therefore also in a condition for allowance.

CR 00-029  
PATENT

No amendment made herein was related to the statutory requirements of patentability unless expressly states; rather any amendment not so identified may be considered as directed *inter alia* to clarification of the structure and/or function of the invention and Applicants' best mode for practicing the same. Additionally, no amendment made herein was presented for the purpose of narrowing the scope of any claim, unless Applicant has argued that such amendment was made to distinguish over a particular reference or combination of references. Furthermore, no election to pursue a particular line of argument was made herein at the expense of precluding or otherwise impeding Applicants from raising alternative lines of argument later during prosecution. Applicants' failure to affirmatively raise specific arguments is not intended to be construed as an admission to any particular point raised by the Examiner.

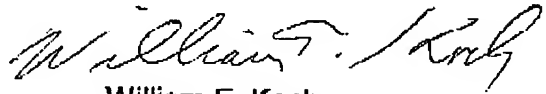
The Applicant believes that the subject application, as amended, is in condition for allowance. Such action is earnestly solicited by the Applicant. In the event that the Examiner deems the present application non-allowable, it is requested that the Examiner telephone the Applicant's attorney or agent at the number indicated below so that the prosecution of the present case may be advanced by the clarification of any continuing rejection.

**SUMMARY:** Reconsideration is respectfully requested. In view of the foregoing amendments and remarks it is believed that the application, including claims 1-16, is now in condition for allowance. Notice to that effect is respectfully requested.

CR 00-029  
PATENT

Authorization is hereby given to charge any fees necessitated by actions taken herein, including any extension of time fees, to Deposit Account 502117.

Respectfully submitted,



William E. Koch  
Attorney for Applicant  
Reg. No. 29,659  
Tel. (602) 952-3628

SEND CORRESPONDENCE TO:

MOTOROLA, INC.  
Law Department  
Customer Number: 23330